Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

Claims 1-67 (cancelled)

Claim 68. (New): A cleaning robot adapted to move in a swimming pool or the like in accordance with commands from a main controller therein, the robot when in use being free of any cables connected to an external power supply, and having:

(a) a body unit with a battery power pack, adapted to move along the floor and/or walls of said pool;

(b) a tail unit comprising a head portion adapted to float on the surface of a pool and a connector designed for charging batteries or battery in said battery power pack by an external charger; and

(c) a tethering cable attached at least in use, to the body unit, said tethering cable being of sufficient length to allow the float of said head portion while the body unit is on the floor of the pool.

Claim 69. (New): A cleaning robot according to Claim 68, wherein the head portion is adapted to submerge below the water surface upon encountering an obstacle.

Claim 70. (New): A cleaning robot according to Claim 68, wherein the head portion is of a geometry which minimizes the likelihood of entanglement thereof with obstacles.

Claim 71. (New): A cleaning robot according to Claim 68, the robot being adapted to stop at a predetermined location when a predetermined number of wall encounters occur after the battery voltage drops below a predetermined amount.

Claim 72. (New): A cleaning robot according to Claim 68, wherein the head portion comprises a float user interface, and is designed such that the float user interface is disposed at or near the surface of the pool, when the tail unit is in its working position.

Claim 73. (New): A cleaning robot according to Claim 72, wherein said tail unit further comprises a tail unit controller in communication with the main controller.

Claim 74. (New): A cleaning robot according to Claim 72, wherein the float user interface is adapted to receive user input.

Claim 75. (New): A cleaning robot according to Claim 68, wherein said tail unit further comprises at least one data presentation device.

Claim 76. (New): A cleaning robot according to Claim 68, further comprising an external battery charger, which is connectable to the tail unit for charging at least one battery in said battery power pack in the body unit of the robot.

Claim 77. (New): A cleaning robot according to Claim 76, wherein the charger is adapted to communicate with the tail unit via a cable, and wherein another cable is used for connecting the tail unit with said battery power pack.

Claim 78. (New): A cleaning robot according to Claim 76, wherein the charger comprises at least one charger-side data presentation units.

Claim 79. (New): A cleaning robot according to Claim 68, the robot having a memory adapted to store a certain orientation of the robot, said controller being adapted to provide the robot with a command to align its orientation in accordance with the stored orientation.

Claim 80. (New): A cleaning robot according to Claim 79, wherein said orientation is defined by the robot's initial orientation.

Claim 81. (New): A cleaning robot according to Claim 79, further comprising a detector for detecting a wall when impacted by the robot, wherein the alignment of the robot's orientation is performed after at least one wall detection.

Claim 82. (New): A cleaning robot according to Claim 81, the robot further comprising an electro-mechanical drive means; said first controller being adapted to detect the current through the drive means, whereby when the current exceeds a threshold, the controller assumes a wall impact to have occurred.

Claim 83. (New): A cleaning robot as disclosed in Claim 82, wherein the threshold is determined by multiplying an average of the current passing through the drive means during one or more traversings of the pool floor by a constant.

Claim 84. (New): A cleaning robot according to Claim 80, wherein the controller is adapted to allow the robot to perform a straight lap and a subsequent stepped lap, each between two wall detections, both laps comprising said alignment, the stepped lap also including rotation of the robot through a predetermined angle relative to its orientation during the straight lap, whereby the robot is adapted to move along two known mutually angled directions independently of the shape of the walls of the swimming pool.

Claim 85. (New): A cleaning robot according to Claim 84, wherein said predetermined angle is 90 degrees.

Claim 86. (New): A cleaning robot according to Claim 84, wherein during the stepped lap, the robot moves for a period constituting a predetermined portion of the duration of the preceding straight lap, said portion being increased after a predetermined number of wall detections.

Claim 87 (New): A cleaning robot according to Claim 68, adapted to move in a swimming pool or the like, wherein the robot is preprogrammed for performing a plurality of cleaning modes, of which at least two are selected from a group comprising:

(a) the robot scanning the floor surface of the pool, and ascending a sidewall at predetermined time intervals;

(b) the robot having a decreased speed and an increased suction; and

(c) the robot executing a cycle comprising ascending a sidewall to the waterline, cleaning the waterline for a predetermined amount of time in a first direction with relation to the pool, descending the sidewall to the floor, moving along the sidewall a predetermined distance in a second direction which is opposite the first direction, ascending the sidewall, and continuing cleaning in the first direction.

Claim 88 (New): A cleaning robot adapted to move in a swimming pool or the like, adapted to move in the pool along two scanning directions obtained by adjusting the orientation of the robot in a predetermined way relative to a reference orientation thereof, said scanning directions having a predetermined angle therebetween, independently of the swimming pool's shape.

Claim 89 (New): A cleaning robot according to Claim 88, the robot having a memory adapted to store the orientation of the robot, and a controller being adapted to provide the robot with a command to align its orientation in accordance with the stored orientation.

Claim 90. (New): A cleaning robot according to Claim 89, wherein said orientation is defined by the robot's initial orientation.

Claim 91. (New): A cleaning robot according to Claim 88, wherein said predetermined angle is 90 degrees.

Claim 92. (New): A cleaning robot adapted to move in a swimming pool or the like in accordance with commands from a main controller therein, the robot when in use being free of any cables connected to an external power supply, and having a body unit with a battery power pack, adapted to move along the floor and/or walls of said pool, and a tail unit comprising a head portion adapted to float on the surface of a pool, and a tethering cable attached at least in use, to the body unit; the robot comprising a means for detecting its orientation.

Claim 93. (New): A cleaning robot according to Claim 92, wherein the means is a digital compass integrated onto the controller.